Prepared by: N. Tsoupas
Date: Jan 10, 2006
Reviewed by: A. Etkin
Date: 1-13-06
Approved by: D. I. Lowenstein

Date: 1/13/06

AtR RSC Check-Off List for Protons Produced by the Polarized Proton Source, to be Transported to the W-Dump only

Completion of this AtR RSC Check-Off List is a prerequisite for transporting proton-beam, produced by the polarized proton source, down to the W-dump.

The "NO FEB" Check off List at the MCR must be complete and must remain in effect until the completion of this AtR Check off List.
After the completion of this List the LOTO imposed by the "NO FEB" Check off List may be removed to allow polarized proton beam into the AtR Line.

1. _____(LP_FEB) The NO FEB Check off List has been completed

_____ _____(Date/Time)
_____ _____(Person)

The V line MUST remain LOTO during the AtR and RHIC operations.

2. _____(LPV) VD3&4 power supply LOTO:

_____(Tag #) _____(Date/Time)
_____(Lock #) _____(Person)

The following devices in item #3. below, of the AtR Line MUST remain LOTO during the time period required to test the U-W line with polarized proton beam.

3.0 _____(LPRHIC) RHIC RSC Check off List complete.

OR

3.1 _____ (LPRHIC) RHIC RSC LOTO off .

OR

3.1.1 ATR Switch magnet power supply (psswm) or leads LOTO
_____(LPRHIC) _____lock# _____tag# _____date

3.1.2 X-line arc (psxarc90) power supply or leads LOTO
_____(LPRHIC) _____lock# _____tag# _____date

3.1.3 Y-line arc (psyarc90) power supply or leads LOTO
_____(LPRHIC) _____lock# _____tag# _____date

4._____(LEUup) U-line upstream area shielding and barriers inspected and acceptable.

5._____(LEUdown) U-line downstream area shielding and barriers inspected and acceptable.

6._____(LEV) V-Block house shielding and barriers inspected and acceptable for AtR operations.

7._____(LEW) W-line area shielding and barriers inspected and acceptable.

8._____(LEU) Berm Fence Inspected.

9._____(RCD) Post AtR Berm Fence as follows:
Radiation Area, Controlled area, RWP required, RWP located at the bldg. 911 training office. Contact MCR prior to entry at x-4662.

10._____(RCD) Post AtR beam Access gates as follows:
High Radiation Area w/Beam On, Radiation Area, Controlled area, RWP required, RWP located at the bldg. 911 training office. Contact MCR prior to entry at x-4662.

11._____(RSCC) Shield plug for TOF port reviewed and approved for AtR operation.

12._____(SGL) Chipmunks required for U-line-upstream in place (See attached list).

13._____(SGL) Chipmunks required for W-line tested, in place, including interlock function as needed (See attached list).

14._____(SGL) PASS tests complete for running beam to the W-line dump.

15. _____(IGH) The AGS B15 Current transformer is functional and will allow an upper limit of **$6.5x10^{11}$ protons per AGS cycle.** This limit is equivalent to 39 mAmps and has been approved. (J. Glenn Jan. 12 2006 RSC_File and RSC minutes April 1 2004) (AGS cycle = 1.3 sec)

16._____(MCR) Procedure in place to limit the number of protons lost in the Injection arcs (X,Y) of AtR to less than $1.7x10^{13}$ in an hour.
In order to relate proton limit to Au limit in C-A TPL 01-15; $1.7x10^{13}$ protons In one hour is equivalent to $1.7x10^{11}$ Au ions in one hour.

17. _____(LPAtR) When all items of this AtR List have been completed the restriction of preventing protons from the polarized ions source beyond the 8^{o} may be removed (item #4) and proton bunches from the polarized proton source may be extracted into the AtR line.

18. _____ (OC) List completion verified by on-duty operations coordinator.

After all of the above items have been completed, the LOTO of all the devices appearing in Item #1 may be removed and the following items #19 and #20 and #21 should be signed off.

19. _____(ACG) Chipmunk NM051 (access by UGE1 Gate)
a)chipmunk interlock DISABLED
b)unit to be positioned in the labyrinth of UGE1 Gate.

20. _____(ACG) Chipmunk NM078 (access by UGE1)
a)chipmunk interlock DISABLED
b)unit to be positioned on the FEB 0^{o} spur.

21. _____(ACG) Chipmunks listed in items #19 and #20, above, functional, tests of interlock complete, are monitored by computer, and function correctly.

Now proton beam may be extracted from the AGS to the W-line beam dump.

ES&H	Env. and Safety Coord. A. Etkin
IGH	Instrumentation Group Head (Thomas Russo)
RCD:	Radiation Controlled Division (D. Ryan or designate)
LEUdown)	J. Scaduto
LEUup:	D. Phillips
LEW:	D. Phillips
LEV:	C. Pearson
LPFEB:	N. Tsoupas
LPU:	N. Tsoupas
LPV:	N. Tsoupas
LPW:	N. Tsoupas
LPRHIC:	A. Drees
MCRGL:	MCR Group Leader: Peter Ingrassia (or designate)
RSC:	Radiation Safety Committee member
RSCC:	Radiation Safety Committee Chairperson: D. Beavis or designate
SEP:	AGS S&EP representative
SGL:	Security Group Leader J. Reich (or designate)
OC:	Operations Coordinator
ACG	Access Control Group (J. Reich or designate)
RCT	Radiation Control Technician

U-LINE CHIPMUNKS

Name	Location	Trip Level mrem/hr	Comments
NMO208	Outside gate VPGE1 (outer entrance blockhouse)	By-Pass	
NMO209	On berm downstream of VQ9 next to NMO210	20.0	
NMO210	On berm downstream of VQ9 next to NMO209	20.0	
NMO211	Dehumidifier room (igloo)	2.5	
NMO213	Outside gate UGE1 (upstream entrance to U-line)	20.0	
NMO222	On berm besides vent shaft over 0-degrees alcove	20.0	Optional
NMO223	At corner of substation nearest upstream U-line	20.0	Optional
NMO81	Inside UGE2	20.0	
NMO82	U/S WEST-U LINE-1	2.5	
NMO83	U/S WEST-U LINE-2	2.5	
NMO84	U/S WEST-Hg TGT	2.5	
NMO85	D/S ULINE BLOCKHSE	2.5	
NMO86	Inside UGE3	20.0	

W-LINE CHIPMUNKS

Name	Location	Trip Level mrem/hr	Comments
NMO216	South edge of Thompson Rd. above Y-line. Another chipmunk connected in series placed on North edge	2.5	
NMO217	South edge of Thompson Rd. above X-line. Another chipmunk connected in series placed on North edge	2.5	
NMO218	Inside weather door at gate WGE2	2.5	
NMO219[1]	Downstream of W-line shield wall	2.5	

[1] NMO219 interlock is disabled when beam is allowed in W-line